

TUTTLE (A.H.)

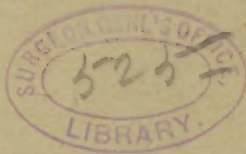
TOTAL EXTIRPATION OF THE UTERUS BY A NEW METHOD.

BY

ALBERT H. TUTTLE, M. D., S. B.,

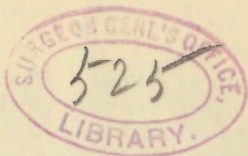
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TOTAL EXTIRPATION OF THE UTERUS BY A NEW METHOD.¹

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THE able description of Krug's method of total extirpation of the uterus and its excellent demonstration by Gustave Zinke at the Pan-American Congress recently held in Washington, aroused within me a feeling of interest in this subject I never before maintained, and seemed to me like a light in the horizon which betokened the birth of another brilliant day in the calendar of abdominal surgery.

After condemning to the terrible sufferings and agonies of the disease in its natural course to death, two cases of uterine cancer, which, even by our latest technique, were in an inoperable condition, and after noting a few scanty reports of combined methods of hysterectomy scattered in recent volumes of medical literature, I began to think seriously for the purpose of devising some method of operating which would admit of a more extensive dissection, and, with a reasonable amount of skill, might be made available for this class of cases.

By scanning the developmental history of hysterectomy, at the same time constantly bearing in mind the dangers and necessities of the operation, I have reached these conclusions, which I have put to the practical test and now respectfully submit for your consideration. The broad facts in the history of the removal of the uterus

¹ Read before the Cambridge Society for Medical Improvement.

for disease are as follows: The earliest operations, where the uterus was only partially removed, were made by the abdominal route, and were for the relief of large tumors that menaced life. Later, the vaginal route was adopted, because it is especially adapted to the treatment of carcinomatous conditions, where the cervix is involved and the total extirpation of the uterus required. The recent advance to total extirpation by way of the abdomen seems to be an outcome of the problem of dealing with the stump which by the older methods caused a protracted convalescence, a frequent complication of ventral hernia, and a great mortality, rather than to meet such necessities as cervical cancer. The fact that the mortality is diminished to such an extent that a recent writer says, "In the hands of a skilled operator it ought not to exceed that of uncomplicated ovariectomy," shows what an advance this is over older methods of hysterectomy. The convalescence is about as rapid as after normal labor, and there is not the danger of hernia that exists from an extra-peritoneal treatment of the stump.

A short time ago I attempted to remove the uterus, per vagina, in a woman about sixty years of age, but owing to a narrow introitus, which was not much improved by incision, and a very rigid condition of the vagina due to senility, I abandoned the operation after sewing up the os and making an incision through the vagina behind the cervix, and made a total removal by way of the abdomen. The staff used was improvised from a steel sound; and as the cervix was undefinable, the vagina short, and the separation of the bladder from the uterus consequently deep in the pelvis, I was in constant fear while making the incision through the anterior vaginal attachment of the uterus, that a fold of the empty bladder would catch over

the staff and be incised. This experience led me to believe that a staff with an attachment to fit the canal of the uterus could be made which would accurately define the border of the cervix and serve as a guide for making the incisions through the vaginal vault. After due deliberation, the question of sepsis from the uterine canal forcibly presented ; and in order to meet

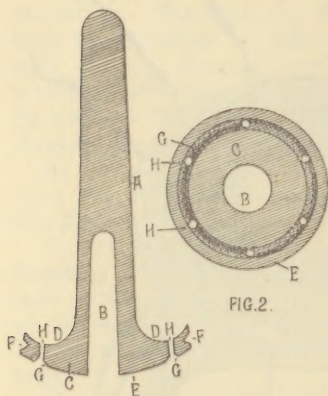


FIG. 1.

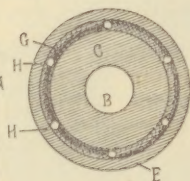


FIG. 2.

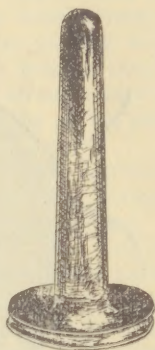


FIG. 3.

this objection, the idea was conceived of hermetically sealing the canal by sewing in a hollow stem with a cap made to fit over the cervix. The stems were then cast and turned in brass into the following shape : the central cone (*a*) which fits into the uterine canal is three-eighths of an inch in diameter, and tapers down to one-fourth, and the length in three sizes is respectively one and three-fourths, two, and two and one-fourth inches. It is penetrated to the depth of one inch with a central cavity (*b*), which is bored

with a three-sixteenths-inch drill and reamed out to one-fourth inch at the orifice, ending blindly. The cap (*c*) is a circular disc, three-fourths, one, and one and one-fourth inches in diameter, slightly convex on the outside (*e*) and deeply concave on the inside, the

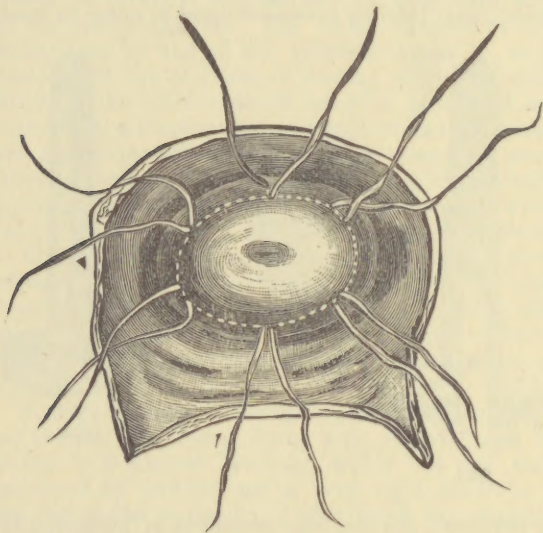


FIG. 4.

concavity forming a wide groove (*d*) about the attachment of the cone. In the edge of the disc a narrow groove (*f*) is cut for the purpose of guiding the point of the knife in the abdominal dissection. A narrow groove (*g*) is also made on the convex side within one-sixteenth of an inch and parallel to the edge of the disc. In this groove, at regular intervals apart, there

are six small holes, which perforate the disc and are intended to receive the sutures that fasten the instrument to the cervix, and which are tied into, and protected by, the groove (*h*).

The benefit of such an appliance is at once manifest; it makes the uterus firm, rigid and more easily manipulated.

The edge of the metal cap serves as director in cutting down from above and defines the borders of the cervix. The concavity of the cap forms a receptacle for iodoform or other antiseptic powder, and with the cone effectually corks up the uterine canal, which is furthermore hermetically and strongly sealed by a line of silk sutures passed around the cervix and through the small holes in the disc.

By preventing the discharge of septic material from the uterus, it admits later the more perfect sterilization of the vagina, which can be maintained.

If, with extensive disease of the cervix, the line of fastening sutures are passed through healthy parts well outside of all diseased tissues, through portions of the vagina if necessary, drawn tight, and tied, the line on dissection will be sharply defined by the metal edge.

Finally, if necessary, a firm hold is offered to the finger or a metal elevator for raising the uterus from below during the dissection and passage of the ligatures about the vessels and broad ligaments.

I found the application of such an instrument more extensive than at first imagined, since it serves to form the basis of a special technique for removing the cancerous uterus, where from the amount of cervical disease, it would be impossible to operate by the usual methods.

Operation.—The patient, after careful preparation of the bowels, is etherized and placed in the lithot-

omy position; the vagina thoroughly cleansed with soap and a solution of bichloride of mercury; the os,

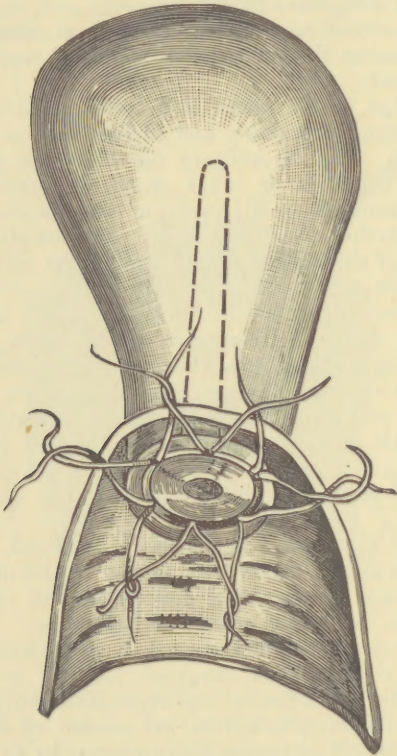


FIG. 5.

if necessary, dilated; the uterine canal curetted; and the cervix drawn down with tenaculum forceps as far

into the introitus as possible. Six strong silk sutures are now passed so as to completely surround the cervix, and their ends kept long enough to tie easily. If the cervical tissue is normal, it is better to hold the instrument, and the needle should pass through it, as seen in Fig. 4; but if the disease has extended beyond the cervix, then it will be necessary to pass the sutures, in part at least, through vaginal tissue.

The uterine canal is again dilated to facilitate the easy entrance of the seal, and douched with antiseptic solution; the seal is then passed wholly in, and if found to fit satisfactorily, is partially withdrawn so as to enable one to bring the sutures through the small holes in the periphery; the sutures are now drawn through the small holes (*sc*) by means of a small crochet-hook, such as is used by women, and in the same manner, by passing the hook through the hole, catching the sutures, one at a time, and withdrawing hook and thread. The two ends of the sutures nearest each other are drawn through the same hole. The groove (*d*) is then filled with iodoform by slightly depressing the cap, and the instrument is pushed as far as it will go into the uterus. The seal in place, with the sutures, is shown in Fig. 5. The sutures are drawn tight and tied in the groove (*g*), so as to firmly fix the instrument to the uterus.

A continuous line of running suture is now passed, well outside of the edge of the seal, through the walls of the vagina, so as to completely encircle the cervix; and the two ends of the suture left long enough to tie. Care must be taken not to pass the suture too deep in the region of the bladder lest this viscus be injured. The suture *in situ* is seen in Fig. 6.

An incision through the vault of the vagina, encircling the cervix, between the edge of the seal and line of suture, is made, and the uterus sufficiently freed

from its lower attachments, by means of the finger or blunt end of a scalpel, to enable one to close in the vagina below the cap of the seal (see Fig. 6). If there is any hemorrhage from the vaginal artery this is to be checked. The vagina is now closed, leaving the seal in the cavity of the pelvis, by drawing tightly on the ends of the sutures, in the manner of a purse-string, at the same time pushing up the cervix and tying. This is shown in Fig. 7. The sutures for this purpose are best made of absorbable material, such as catgut or kangaroo tendon. The purse-string suture can be reinforced in some cases by one or more over-

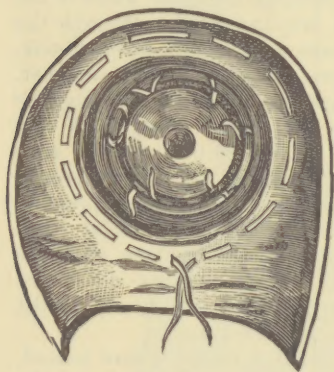


FIG. 6.

and-over stitches; or in cases where drainage may be considered necessary, a piece of gauze or wicking may be inserted in the wound before the suture is drawn tight. A piece of iodoform gauze is packed in the vagina, and finishes this part of the operation.

The patient is now prepared for an abdominal incision; the cavity of the perito-

neum is opened above in the usual manner; the uterus is seized with strong volsellum forceps and drawn up into the wound; a sound is passed into the bladder and the exact limits of the attachment to the uterus determined; an incision is then made through the peritoneal covering of the anterior portion of the uterus about three-quarters of an inch above the bladder

attachment, and the peritoneum with the bladder is dissected away from the uterus well along the sides and beyond the edge of the seal below. A large-sized sponge inserted between the uterus and bladder at this period of the operation will protect the latter organ and ureters. The uterus is now drawn forward and downward, and an incision made through the peritoneal covering of the posterior surface; the peritoneum is pushed or dissected well away from the uterus and the incision carefully extended into the broad ligaments. A large, flat sponge is inserted behind the uterus, and the bowels kept out of the way. Clamp forceps are then placed on each broad ligament, outside of the ovaries, the points reaching as far as the metal cap over the cervix, and the uterus with the adnexa cut away from its



FIG. 7.

attachments, keeping as close to the sides of the organ as possible. During this procedure, as often as a vessel is cut across it is immediately tied to insure against hemorrhage in case the forceps should slip.

After the uterus is removed and the vessels tied the clamps are taken off and any oozing of blood is stopped by suturing. Then the peritoneal cavity is entirely closed below by sewing the anterior reflection of the peritoneum, which was dissected from the uterus, to the posterior; the stump of the broad ligaments should be closed in at the same time. This requires but a single line of continuous suture, which

should be taken in the following manner: starting at the anterior end of the wound in one of the broad ligaments, the point of a full-curved Hagerdorn needle is made to enter and come out on the same side of one of the peritoneal folds of the ligament, the needle being carried parallel to, and about a quarter of an inch from the cut edge; it is then passed across to the



FIG. 8.

other fold and entered in the same manner at a point directly opposite the exit of the former stitch; this is continued until the whole line of raw surface from the beginning at one ligament, across the pelvis to the end of the other ligament, is closed in. As the stitches are drawn tight, the cut edges of the peritoneum should be folded in so as to bring the serous surfaces into contact and leave the sutures buried outside of the peritoneal cavity. The manner of inserting the stitches is illustrated in Fig. 8.

Any blood present should be wiped out of the body

cavity, and the omentum carefully spread over the bowels. The abdominal wound is closed, layer by layer, and the line of incision sealed with collodion. It is better to use animal ligatures in doing the operation.

It will be seen at a glance that by the above method no raw surface is left with which the gut can come in contact, and form subsequent adhesions; that in case drainage is employed, it is in the cavity of the pelvis below the peritoneum; and that with the patient in the Trendelenberg posture, the operation may be finished intelligently, the parts being in full view and easily accessible. The operation is practically bloodless. Its greatest fault, as far as I have been able to determine, consists of the time it requires, but this is partially compensated for by the fact that the time consumed when the peritoneal cavity is open, is less than by the usual method of supra-vaginal hysterectomy, and also by the fact that the operation when completed is more finished than any other hitherto advanced. For the relief of cancer of the cervix it completely does away with the blind surgery of the vaginal method and the concomitant dangers of hemorrhage, injury to bladder and ureter; for the treatment of other affections which require hysterectomy it avoids the dangers of hernia and sepsis peculiar to the extra-peritoneal treatment of the stump; it avoids the danger of infection in the intra-peritoneal treatment, and is attended with a more rapid convalescence; finally, it has all the advantages of the modern method of total extirpation, with the additional one of greater facility, greater perfection, and wider range of usefulness.

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